

Context and Reading Guidelines

Context:

I plan to teach this lesson next quarter in my CLUSTER 70CW seminar, Astrobiology in Science Journalism. This course is for first year undergraduates who are part of Cluster 70, which focuses on the evolution of life and the universe. One of the main goals of this seminar, the third quarter of their experience in the Clusters, is to teach students how to write about science for general audiences, considering choices like when to use (or avoid) technical jargon, what tone to use, and what information to emphasize. Students will already have had two quarters of exposure to scientific research literature, and how to read a technical scientific text, but likely haven't thought critically yet about the conventions of the genre or how it may differ from how *they* usually encounter science in their regular reading life (e.g. in popular news media).

I chose a research article that wasn't too inaccessible to a non-expert reader, and made sure it had a corresponding [Astrobite](#). I wanted to have a technical article with a popular science article to accompany it, so that students can directly see the same main idea conveyed in two very different ways. I'm focusing on Astrobites in particular since, in a future assignment, students will end up writing their own Astrobite article from a research paper of their choosing. This style (a bite-sized summary) is one of the most straightforward types of science writing, so I figured it would be a good place for them to start from. Astrobites also does partnerships with undergraduate classes, providing a way for students to work with an editor to get their piece published.

The reading here is setting them up to get thinking about genre and audience—our activity in class will then use this as a jumping off point to analyze the two articles and their differences, finding what linguistic/structural/content choices create the differences they felt while reading and the audiences they guessed.

My learning objectives for this assignment and corresponding lesson are:

1. Students will compare the purpose, structure, content, and style of a technical scientific research article and a popular science article.
2. Students will be able to describe what we mean by “audience” and identify features of a text that indicate who the audience is.
3. Students will recognize shortcomings of both technical and popular science writing, including the tendency for technical writers to lack clarity.
4. Students will reflect on their own habits and preconceptions as readers of science writing.

Reading Guidelines:

Read the *research article* first, and plan to read it twice. On your first read through, read only the abstract, introduction, and conclusions – this will help you orient yourself and hopefully start to see the big picture of the research without getting lost in the details. On your second time, read

the article all the way through. While you read, mark (circle, highlight, etc.) parts you found confusing or didn't understand. Note — it is ok if there is a lot you don't understand here! Don't get bogged down in understanding every word, just do your best to get the idea. Once you have finished your second read through, make a note at the end of the article with your answers to the following questions: What was the main point of this article? Who do you think the author had in mind as a reader? How did you feel reading this article?

Once you have finished the above process with the research article, read the *popular article*. Then, make a note at the end of this article with your answers to the following:

- What was the main point of this article? Was this different from what you got from the research article, and if yes, how so?
- Who do you think the author had in mind as a reader? Note: think about how you came to that answer / what hints in the text made you think of your answer.
- How did you feel reading this article? (Feel free to compare to your earlier response about feelings while reading the research article.)

Texts:

Research article: [Habitability of the early Earth: liquid water under a faint young Sun facilitated by strong tidal heating due to a closer Moon](#) (René Heller et al. 2021, PalZ – open access, PDF also attached)

Popular article: [How the Moon helped mold the Earth into a habitable potato](#) by Sasha Warren (2021, Astrobites – open access)

Lesson Plan

Learning Objectives:

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Session Breakdown:

Activity	Goal	Timing (1hr total)
Debrief: How did reading go? How did you feel reading each article? Which did you enjoy? Did you get different takeaways from each article? [Use Menti / Think Pair Share]	Self-reflection; discussion will hopefully lead into whether they were the intended audience or not based on how they felt	10 minutes
Discussion: What was the purpose of each article, and who was the intended audience of each article? How did you know?	Describing audience, comparing purpose of two articles. Understanding the role of different genres in science / scicomm	10 minutes
Group Activity : Diving deeper into the text, searching for indicators of audience and purpose based on structure, sentence-level choices, and more. Students will work in breakout rooms guided by a Google doc (see link), then we'll come back together for discussion/recap.	Comparing articles and identifying features of the text that create differences	20 minutes in breakout rooms, 10 minutes discussion
Discussion: Pros/cons of each writing style — what does each genre do that the other doesn't? Are all these differences necessary — why/why not?	Discussing why we use different styles, and what each accomplishes and where they fall short. Hopefully will get into some critical discussion on lack of clarity and therefore accessibility in technical writing	10 minutes